U. S. Navy Seafarer Program/ Project ELF Collection MS-037

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English
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Michigan Technological University Archives and Copper Country Historical Collections

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Summary Information

Repository:	Michigan Technological University Archives and Copper Country Historical Collections
Title:	U. S. Navy Seafarer Program/ Project ELF Collection
ID:	MS-037
Date [inclusive]:	1968-1997
Physical Description:	18.93 cubic feet 16 paige boxes and 8 manuscript boxes
Language of the Material:	English
Mixed Materials [box]:	1-19
Mixed Materials [box]:	20-24
Abstract:	Collection, 1968-1997, of material relating to the Navy's Seafarer Program and Project ELF, compiled by the Michigan Technological University Archives and Copper Country Historical Collections in Houghton, Michigan.

Preferred Citation

MS-037, U. S. Navy Seafarer Program/ Project ELF Collection, Michigan Technological University Archives and Copper Country Historical Collections, Houghton, Michigan.

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Historical Note

Extreme Low Frequency (ELF) radio signals are considered useful for one-way communication to submarines because they penetrate seawater to depths of several hundred feet. ELF is the only available system which, according to the US Navy, will allow continuous contact with submarines while they are at patrol depth and cruising speed. The history of ELF started with Sanguine which was to be a hardened system comprising over a hundred buried transmitters and 6,000 miles of underground cable covering 6,500 square miles in Michigan and Wisconsin. When that wasn't accepted the Navy proposed SEAFARER (Surface ELF

Antenna For Addressing REmotely-deployed Receivers) with three above-ground transmitters and 2,400 miles of buried cable occupying 4,700 square miles. Then it was scaled down to Austere ELF with two surface transmitters and 158 miles of cable -- 130 miles of it buried along utility and roadway right-of-ways. The final incarnation was Project ELF, still with two transmitters and only 84 miles of cable hung on utility poles. In 2004 the US Navy ended Project ELF, citing improvements in communication technology that rendered ELF obsolete as well as the changing requirements of the modern Navy.

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Collection Scope and Content Summary

Collection, 1968-1997, of material relating to the Navy's Seafarer Program and Project ELF, compiled by the Michigan Technological University Archives and Copper Country Historical Collections in Houghton, Michigan. Includes research reports, ecological and biological monitoring reports, Seafarer site surveys, ELF public hearing minutes, environmental impact statements, activist files, correspondence, maps, and other printed ephemera related to the implementation of and protest against the Seafarer Program and Project ELF.

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Administrative Information

Publication Statement

Michigan Technological University Archives and Copper Country Historical Collections

1400 Townsend Drive
Houghton 49931
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Access

Available for use in the Michigan Technological University Archives and Copper Country Historical Collections.

Conditions Governing Use

Various copying restrictions apply. Guidelines are available from Michigan Technological University Archives & Copper Country Historical Collections.

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Controlled Access Headings

- Minutes
- Reports
- Clam Lake (Wis. : Lake)
- Republic (Mich.)
- Communications, Military
- ELF electromagnetic fields
- Audiocassettes
- Correspondence
- Research (Document genres)
- Surveys (Documents)
- Maps (Documents)
- Sanguine Project
- Project Seafarer

Collection Inventory

Navy Ecological Monitoring Program

Language of the Material: English.

Title/Description	Instances	
Compilation of 1982 annual reports - Navy Ecological Monitoring Program, May, 1983	box 1	folder 3
Compilation of 1983 annual reports - Navy Ecological Monitoring Program - Volume 1, July, 1984	box 1	folder 4
Compilation of 1983 annual reports - Navy Ecological Monitoring Program - Volume 2, July, 1984	box 1	folder 5
Compilation of 1984 annual reports - Navy Ecological Monitoring Program - Volume 1, June, 1985	box 1	folder 6
Compilation of 1984 annual reports - Navy Ecological Monitoring Program - Volume 2, June, 1985	box 1	folder 7

Compilation of 1985 annual reports - Navy Ecological Monitoring Program - Volume 1, July, 1986	box 1	folder 8
Compilation of 1985 annual reports - Navy Ecological Monitoring Program - Volume 2, July, 1986	box 1	folder 9
Compilation of 1985 annual reports - Navy Ecological Monitoring Program - Volume 3, July, 1986	box 1	folder 10
Compilation of 1986 annual reports - Navy Ecological Monitoring Program - Volume 1, July, 1987	box 2	folder 1
Compilation of 1986 annual reports - Navy Ecological Monitoring Program - Volume 2, July, 1987	box 2	folder 2
Compilation of 1986 annual reports - Navy Ecological Monitoring Program - Volume 3, July, 1987	box 2	folder 3
Compilation of 1987 annual reports - Navy Ecological Monitoring Program - Volume 1, July, 1988	box 2	folder 4
Compilation of 1987 annual reports - Navy Ecological Monitoring Program - Volume 2, July, 1988	box 2	folder 5
Compilation of 1987 annual reports - Navy Ecological Monitoring Program - Volume 3, July, 1988	box 2	folder 6
Compilation of 1988 annual reports - Navy Ecological Monitoring Program - Volume 1, August, 1989	box 2	folder 7
Compilation of 1988 annual reports - Navy Ecological Monitoring Program - Volume 2, August, 1989	box 2	folder 8
Compilation of 1988 annual reports - Navy Ecological Monitoring Program - Volume 3, August, 1989	box 2	folder 9
Compilation of 1989 annual reports - Navy Ecological Monitoring Program - Volume 1, August, 1990	box 2	folder 10
Compilation of 1989 annual reports - Navy Ecological Monitoring Program - Volume 2, August, 1990	box 3	folder 1
Compilation of 1989 annual reports - Navy Ecological Monitoring Program - Volume 3, August, 1990	box 3	folder 2
Compilation of 1990 annual reports - Navy Ecological Monitoring Program - Volume 1, August, 1991	box 3	folder 3
Compilation of 1990 annual reports - Navy Ecological Monitoring Program - Volume 2, August, 1991	box 3	folder 4
Compilation of 1990 annual reports - Navy Ecological Monitoring Program - Volume 3, August, 1991	box 3	folder 5
Compilation of 1991 annual reports - Navy Ecological Monitoring Program - Volume 1, August, 1992	box 3	folder 6
Compilation of 1991 annual reports - Navy Ecological Monitoring Program - Volume 2, August, 1992	box 3	folder 7

Compilation of 1991 annual reports - Navy Ecological Monitoring Program - Volume 3, August, 1992	box 3	folder 8
Compilation of 1993 annual reports - Navy Ecological Monitoring Program - Volume 1, April, 1994	box 3	folder 9
Compilation of 1993 annual reports - Navy Ecological Monitoring Program - Volume 2, April, 1994	box 3	folder 10
Compilation of 1993 annual reports - Navy Ecological Monitoring Program - Volume 3, April, 1994	box 4	folder 1
An evaluation of the U.S. Navy's Extremely Low Frequency (ELF) communications system ecological monitoring program, prepublication copy, 1997	box 20	folder 1

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Seafarer Site Survey

Language of the Material: English.

Title/Description	Instances	
Seafarer Site Survey - Introduction, April, 1976	box 4	folder 2
Seafarer Site Survey - Socioeconomic Data, April, 1976	box 4	folder 3
Seafarer Site Survey - Governmental Data, April, 1976	box 4	folder 4
Seafarer Site Survey - Land Ownership Data, April, 1976	box 4	folder 5
Seafarer Site Survey - Land Use Data, April, 1976	box 4	folder 6
Seafarer Site Survey - Market Value Data, April, 1976	box 4	folder 7
Seafarer Site Survey - Transportation Data, April, 1976	box 4	folder 8
Seafarer Site Survey - Utilities Data, April, 1976	box 4	folder 9
Seafarer Site Survey - Mineral Extraction Data, April, 1976	box 4	folder 10
Seafarer Site Survey - Bedrock Geologic Data, April, 1976	box 4	folder 11
Seafarer Site Survey - Surficial Geologic Data, April, 1976	box 4	folder 12
Seafarer Site Survey - Slope and Terrain Data, April, 1976	box 4	folder 13
Seafarer Site Survey - Soil Data, April, 1976	box 4	folder 14
Seafarer Site Survey - Surface Water Data, April, 1976	box 4	folder 15
Seafarer Site Survey - Subsurface Water Data, April, 1976	box 4	folder 16
Seafarer Site Survey - Climatic Data, April, 1976	box 4	folder 17
Seafarer Site Survey - Cultural and Recreation Data, April, 1976	box 4	folder 18
Seafarer Site Survey - Vegetation Data, April, 1976	box 4	folder 19

Seafarer Site Survey - Wildlife Data, April, 1976	box 4	folder 20
Seafarer Site Survey - Air Quality and Noise Data, April, 1976	box 4	folder 21
Seafarer Site Survey - Right-of-way opportunities and avoidance features, April, 1976	box 4	folder 22

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ELF General Files

Title/Description	Instances	
Extremely Low Frequency (ELF) communications program in Wisconsin and Michigan, system and site definition, program plans, environmental summary and supplemental information, December 1991	box 20	folder 2
ELF communications prospectus, undated	box 20	folder 3
ELF communications system info packet	box 20	folder 4

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ELF System Ecological Monitoring Program

Language of the Material: English.

Title/Description	Instances	
ELF system ecological monitoring program of 1982 progress, August, 1983	box 4	folder 28
ELF system ecological monitoring program of 1984 progress, July, 1985	box 4	folder 29
ELF system ecological monitoring program of 1985 progress, October, 1986	box 4	folder 30
ELF system ecological monitoring program of 1986 progress, December, 1987	box 4	folder 31
ELF system ecological monitoring program of 1988 progress, November, 1989	box 4	folder 32
ELF system ecological monitoring program of 1987 progress, April, 1989	box 4	folder 33
ELF system ecological monitoring program of 1989 progress, November, 1990	box 4	folder 34
ELF system ecological monitoring program of 1990 progress, December, 1991	box 4	folder 35

ELF system ecological monitoring program - Summary Report 1982-91, Nov-92	box 4	folder 36
1985 Annual Report of ELF Ecological Monitoring Program - Vol. 1, July, 1986	box 8	folder 11
1985 Annual Report of ELF Ecological Monitoring Program - Vol. 2, July, 1986	box 8	folder 12
1983 Annual Reports - Navy ELF Ecological Monitoring Program - Vol. 1, July, 1984	box 8	folder 15
ELF Ecological Monitoring Program - Summary of 1984 Progress, July, 1985	box 8	folder 17
ELF communications system ecological monitoring program, a summary report for 1982-1992, October 1993	box 20	folder 5
ELF communications system ecological monitoring program final summary report, March 1996	box 20	folder 6
Electromagnetic field measurements and engineering support, 1988	box 20	folder 7
Electromagnetic field measurements and engineering support, 1992	box 20	folder 8
Electromagnetic field measurements and engineering support, final report, April 1994	box 21	folder 1-2
Aquatic ecosystem studies, final report, November 1994	box 21	folder 3
Herbaceous plant cover and tree studies, annual reports, 1982-1986	box 21	folder 4-8
Herbaceous plant cover and tree studies, annual reports, 1987-1993	box 22	folder 1-7
Herbaceous plant cover and tree studies, annual reports, 1993	box 23	folder 1
Litter decomposition and microflora studies, final report, October 1994	box 23	folder 2
Michigan bird studies, final report	box 23	folder 3
Pollinating insect studies, final report, November 1994	box 23	folder 4
Small vertebrate studies, final report, October 1994	box 23	folder 5
Soil amoeba, final report, November 1995	box 23	folder 6
Soil arthropods and earthworms, final report, April 1995	box 23	folder 7
Upland flora studies, final report, October 1994	box 24	folder 1
Wisconsin bird studies, final report, February 1991	box 24	folder 2

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ELF Public Hearings

Language of the Material: English.

Title/Description	Instances	
ELF Public Hearings - Carson City, Nevada, April, 1977	box 5	folder 1
ELF Public Hearings - Escanaba, MI, May, 1977	box 5	folder 2
ELF Public Hearings - Houghton, MI, May, 1977	box 5	folder 3
ELF Public Hearings - Lansing, MI, May, 1977	box 5	folder 4
ELF Public Hearings - Las Vegas, Nevada, April, 1977	box 5	folder 5
ELF Public Hearings - Marquette, MI, May, 1977	box 5	folder 6
ELF Public Hearings - Las Cruces, New Mexico, April, 1977	box 5	folder 7
ELF Public Hearings - Marquette, Houghton, Escanaba, Lansing MI, Jun-77	box 5	folder 13

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ELF Site Survey Final Report

Language of the Material: English.

Title/Description	Instances	
ELF Site Survey Final Report - Michigan Region, July, 1976	box 5	folder 8
ELF Site Survey Final Report - Michigan Region Antenna construction cost factors and installment plan, July, 1976	box 5	folder 9
ELF Site Survey Final Report - Michigan Region Earth Conductivity Data, April, 1976	box 5	folder 10
ELF Site Survey Final Report - Michigan Region K.I. Sawyer AFB support potential and operational interface, April, 1976	box 5	folder 11
Site Survey Final Report - Earth Conductivity Data, April, 1976	box 5	folder 14

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Seafarer Environmental Impact Statement

Language of the Material: English.

Title/Description	Instances	
Seafarer Draft Environmental Impact Statement, February, 1977	box 6	folder 1
Seafarer Draft Environmental Impact Statement - Summary Statement, February, 1977	box 6	folder 2

Seafarer Draft Environmental Impact Statement - Nevada Environmental Analysis, February, 1977	box 6	folder 3
Seafarer Draft Environmental Impact Statement - Michigan Environmental Analysis, February, 1977	box 6	folder 4
Seafarer Draft Environmental Impact Statement - Appendix A: Site-Independent Info, February, 1977	box 6	folder 5
Seafarer Draft Environmental Impact Statement - Appendix B: Info for the Nevada area of interest, February, 1977	box 6	folder 6
Seafarer Draft Environmental Impact Statement - Appendix C: Info for the New Mexico area of interest, February, 1977	box 6	folder 7
Seafarer Draft Environmental Impact Statement - Appendix D: Info for the Michigan area of interest, February, 1977	box 6	folder 8
Seafarer Draft Environmental Impact Statement - Illustrations and Tables, February, 1977	box 6	folder 9
Seafarer Draft Environmental Impact Statement - Appendix E: Biological and Ecological Info, February, 1977	box 6	folder 10
Seafarer Draft Environmental Impact Statement - Appendix F: Public Interest, February, 1977	box 6	folder 11
Seafarer Draft Environmental Impact Statement - Appendix G: Coordination, February, 1977	box 6	folder 12
Seafarer Draft Environmental Impact Statement - Supplement for experimental operations, September, 1977	box 6	folder 13
Seafarer Draft Environmental Impact Statement - Summary statement and distribution list, February, 1977	box 6	folder 14
Seafarer Draft Environmental Impact Statement - Environmental impacts in the Upper Peninsula of Michigan, February, 1977	box 6	folder 15
Seafarer Draft Environmental Impact Statement - Environmental Impacts of the Nevada geographic region, December, 1977	box 7	folder 1
Seafarer Draft Environmental Impact Statement - Environmental Impacts of the New Mexico geographic alternative, December, 1977	box 7	folder 2
Seafarer Draft Environmental Impact Statement - Public Interest, December, 19778	box 7	folder 3
Seafarer Submarine Command and Control Communication System, June, 1975	box 5	folder 16
Seafarer FBM Command and Control Communications, May, 1972	box 5	folder 15
Seafarer ELF communications system final environmental impact statement for site selection and test operations, summary statement and distribution list, December 1977	box 24	folder 3

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Sanguine System

Language of the Material: English.

Title/Description	Instances	
Sanguine system for validation and full scale development technical annexes, April, 1972	box 7	folder 4
Sanguine system fact sheet, April, 1972	box 7	folder 5
Sanguine system for validation and full scale development, April, 1972	box 7	folder 6
Sanguine system final environmental impact statement for validation and full scale development, April, 1972	box 7	folder 7
Supplement to the Sanguine System - Final Environmental impact statement, February, 1975	box 7	folder 8
Summary of the Ad Hoc Panel on Sanguine, May, 1972	box 5	folder 17
Project Sanguine - Michigan Site, July, 1973	box 8	folder 14

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Miscellaneous Data

Language of the Material: English.

Title/Description	Instances	
Mineral extraction data, February, 1974	box 7	folder 9
Land use data of upper Michigan region, February, 1974	box 7	folder 10
Land productivity data of upper Michigan region, February, 1974	box 7	folder 11
Land ownership data of upper Michigan region, February, 1974	box 7	folder 12
Intro to phase I of the site study for upper Michigan region, February, 1974	box 7	folder 13
Historical and Cultural Data of the western upper peninsula region, February, 1974	box 7	folder 14
Governmental Data of the western upper peninsula region, February, 1974	box 7	folder 15
First order corridor avoidance areas of upper Michigan region, February, 1974	box 7	folder 16
Seafarer Corridor Analysis, January, 1977	box 7	folder 17

Climatic Data of upper Michigan region, February, 1974	box 7	folder 18
Bedrock Geologic Data, February, 1974	box 7	folder 19
Bedrock Geologic Data, February, 1974	box 7	folder 20
Population and Demographic Data, February, 1974	box 8	folder 1
Soil Data, February, 1974	box 8	folder 2
Subsurface water data, February, 1974	box 8	folder 4
Soil Data, February, 1974	box 8	folder 3
Surface Geologic Data, February, 1974	box 8	folder 5
Surface Geologic Data, February, 1974	box 8	folder 6
Surface Water Data, February, 1974	box 8	folder 7
Transportation Data, February, 1974	box 8	folder 8
Vegetation Data, February, 1974	box 8	folder 9
Wildlife Data, February, 1974	box 8	folder 10
Susceptibility of cardiac pacemakers to ELF, April, 1971	box 8	folder 13
FBM Command and Control Communications, May, 1972	box 8	folder 16
Biologic Effects of electric and magnetic fields, 1977	box 1	folder 1
Comparison of environmental effects in MI & WI, March, 1978	box 1	folder 2
Environmental Assessment - ELF facility, September, 1983	box 4	folder 23
Data - Monkeys exposed to ELF radiation, March, 1978	box 4	folder 24
Exposure of Primates to ELF, November, 1977	box 4	folder 25
Exposure of Primates to ELF - copy 2, November, 1977	box 4	folder 26
ELF in Michigan and Wisconsin	box 4	folder 27
ELF Power distribution network data, March, 1976	box 5	folder 12
Electromagnetic Field intensities - Clam Lake and Republic, MI, January, 1984	box 5	folder 19
Electromagnetic Field intensities - Clam Lake, February, 1983	box 5	folder 18

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Ruehr Files

Language of the Material: English.

Title/Description	Instances

Environmental Assessment for Construction of ELF Michigan - Ruth A. Ruehr files, September, 1983	box 8	folder 18
Draft Environmental Impact Statement - Ruth A. Ruehr files, February, 1977	box 8	folder 19
ELF Biological and Ecological research summary - Ruth A. Ruehr files, March, 1975	box 8	folder 20
ELF Biological and Ecological research summary (update) - Ruth A. Ruehr files, February, 1977	box 8	folder 21
Unclassified version of a classified report entitled "The Navy's Strategic Communications Systems" - Ruth A. Ruehr files, May-79	box 8	folder 22
Minutes of Public Info. Meetings at Marquette, Iron Mountain, Iron River - Ruth A. Ruehr files, August, 1976	box 8	folder 23
Project Sanguine: The proposal and controversy in Wisconsin - Ruth A. Ruehr files, November, 1975	box 9	folder 1
The ELF Odyssey: National security vs. environmental protection - Ruth A. Ruehr files, 1980	box 9	folder 2
ELF Miscellaneous - Ruth A. Ruehr files	box 9	folder 3
Draft Environmental Impact Statement - Public Hearings, MI - Ruth A. Ruehr files, April, May	box 9	folder 4
The Newsletter of Stop Project ELF - Ruth A. Ruehr files, February; 1987	box 9	folder 5
ELF communications - A Perspective - Ruth A. Ruehr files	box 9	folder 6
Compilation of ELF Articles/Clippings - Ruth A. Ruehr files	box 9	folder 7
People Against Seafarer - Preliminary Critical Assessment - Ruth A. Ruehr files	box 9	folder 8
Compilation of ELF biomedical and ecological research Vol. 1 - Ruth A. Ruehr files, February, 1975	box 10	folder 1
Compilation of ELF biomedical and ecological research Vol. 2 - Ruth A. Ruehr files, February, 1975	box 10	folder 2
Compilation of ELF biomedical and ecological research Vol. 3 - Ruth A. Ruehr files, January, 1977	box 10	folder 3
Compilation of ELF biomedical and ecological research Vol. 4 - Ruth A. Ruehr files	box 10	folder 4
ELF Background - Ruth A. Ruehr files	box 12	folder 1
History of ELF - Ruth A. Ruehr files	box 12	folder 2
How ELF started in Michigan - Ruth A. Ruehr files	box 12	folder 3
County Opinions - Ruth A. Ruehr files	box 12	folder 4
Seafarer Voting - Ruth A. Ruehr files	box 12	folder 5

ELF Surveys - Ruth A. Ruehr files	box 12	folder 6
Seafarer Voting - Ruth A. Ruehr files	box 12	folder 7
Letters from Carl Levin - Ruth A. Ruehr files, 1981-83	box 12	folder 8
Bob Brown on ELF - Ruth A. Ruehr files	box 12	folder 9
Senator Gaylord on ELF - Ruth A. Ruehr files	box 12	folder 10
Senator Hart & Senator Riegle Material - Ruth A. Ruehr files	box 12	folder 11
Donald Riegle Info. - Ruth A. Ruehr files	box 12	folder 12
Ken Dorman - Ruth A. Ruehr files	box 12	folder 13
Professor VonZellen - Ruth A. Ruehr files	box 12	folder 14
Governor Milliken Material - Ruth A. Ruehr files, 1977	box 12	folder 15
Representative Dominic Jacobetti & vote - Ruth A. Ruehr files, 1976	box 12	folder 16
Governor's letters & news releases - Ruth A. Ruehr files, 1975-76	box 12	folder 17
Material from representative Phil Ruppe - Ruth A. Ruehr files, 1975-78	box 12	folder 18
Representative Ruppe's Poll - Ruth A. Ruehr files, 1975	box 12	folder 19
Letters form Eunice Carlson - Ruth A. Ruehr files	box 12	folder 20
Eunice Carlson Slander - Ruth A. Ruehr files	box 12	folder 21
State Legislature Material - Ruth A. Ruehr files, 1975-81	box 12	folder 22
County Boards - Ruth A. Ruehr files, 1976	box 12	folder 23
Public hearings on Seafarer - Ruth A. Ruehr files, 1977	box 12	folder 24
Michigan Environmental Review Board (MERB) - Pass Statement - Ruth A. Ruehr files	box 12	folder 25
National Academy of Science - Ruth A. Ruehr files, 1976	box 12	folder 29
Bio - Eco Research - Ruth A. Ruehr files, 1974-76	box 12	folder 30
Project Sanguine Research - Ruth A. Ruehr files	box 12	folder 31
Physiology Research - Ruth A. Ruehr files	box 12	folder 33
Pick & Axe Articles + Miscellaneous material - Ruth A. Ruehr files	box 12	folder 36
Pick & Axe Articles + Miscellaneous material - Ruth A. Ruehr files	box 12	folder 37
Pick & Axe Articles + Miscellaneous material - Ruth A. Ruehr files	box 13	folder 1
Newspaper: Pick and Axe - Bessemer, MI, October, 1975	box 10	folder 6

ELF Clippings - Daily Mining Gazette - Ruth A. Ruehr files, 1975-81	box 13	folder 2
ELF Clippings - Daily Mining Gazette - Ruth A. Ruehr files, 1975-81	box 13	folder 3
General ELF Clippings - Ruth A. Ruehr files	box 13	folder 4
General ELF Clippings - Ruth A. Ruehr files	box 13	folder 5
ELF News Clippings - Ruth A. Ruehr files, 1981-85	box 13	folder 6
Seafarer Clippings - Ruth A. Ruehr files, 1975-81	box 13	folder 7
ELF Related Topics - Ruth A. Ruehr files	box 13	folder 8
Press Releases - Ruth A. Ruehr files, 1975-76	box 13	folder 9
PANAX - Ruth A. Ruehr files	box 13	folder 11
New York Times Articles - Ruth A. Ruehr files, 1969-75	box 13	folder 10
Sawyer Air Force Base - Ruth A. Ruehr files	box 13	folder 12
Operation Action UP Documents and Clippings - Ruth A. Ruehr files, 1978	box 13	folder 13
Press Releases - Ruth A. Ruehr files, 1975-80	box 13	folder 14
Various Letters - Ruth A. Ruehr files	box 14	folder 1
Seafarer Letters Received - Ruth A. Ruehr files, 1975-77	box 14	folder 2
Seafarer Letters Received - Ruth A. Ruehr files	box 14	folder 2A
Seafarer Letters Received - Ruth A. Ruehr files, 1977-79	box 14	folder 3
Seafarer Letters Received - Ruth A. Ruehr files, 1978-81	box 14	folder 4
People Against Seafarer - Letters sent - Ruth A. Ruehr files, 1975-76	box 14	folder 5
People Against Seafarer - Letters sent - Ruth A. Ruehr files, 1977-79	box 14	folder 6
People Against Seafarer - Letters sent - Ruth A. Ruehr files, 1978-81	box 14	folder 7
Pro Sanguine - Ruth A. Ruehr files	box 14	folder 8
Navy Response to People Against Sanguine - Ruth A. Ruehr files	box 14	folder 9
Finances - People Against Seafarer - Ruth A. Ruehr files, 1973-81	box 14	folder 10
Finances - People Against Seafarer - Ruth A. Ruehr files	box 14	folder 10A
Friends of People Against Seafarer - Ruth A. Ruehr files, 1975-78	box 14	folder 11

Fundraising - People Against Seafarer - Ruth A. Ruehr files, 1976-77	box 14	folder 12
ELF Navy Documents and Memos - Ruth A. Ruehr files, 1974-81	box 14	folder 13
Seafarer - League of Women Voters - Ruth A. Ruehr files, 1974-78	box 14	folder 14
Seafarer Suppressed Report - Ruth A. Ruehr files	box 14	folder 15
ELF - Things to do - Ruth A. Ruehr files	box 14	folder 16
ELF Preliminary Statement - Ruth A. Ruehr files	box 14	folder 17
Science Advisor - National Organization for Women - Ruth A. Ruehr files	box 14	folder 18
NAS comment - Ruth A. Ruehr files	box 14	folder 19
ELF Wisconsin - Ruth A. Ruehr files, 1970-79	box 14	folder 21
EIS comment - Ruth A. Ruehr files	box 15	folder 1
Misc. 2 - Ruth A. Ruehr files	box 15	folder 3
Misc. 3 - Ruth A. Ruehr files	box 15	folder 4
Misc. 4 - Ruth A. Ruehr files	box 15	folder 5
Misc. 5 - Ruth A. Ruehr files	box 15	folder 6
Misc. 6 - Ruth A. Ruehr files	box 15	folder 7
Misc. 7 - Ruth A. Ruehr files	box 15	folder 8

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Dorman Files

Language of the Material: English.

Title/Description	Instances	
Collection of letters to Ken Dorman regarding ELF - Ken Dorman files	box 9	folder 9
Project Sanguine Briefing Meeting - Ken Dorman files, January, 1974	box 9	folder 10
VFW on ELF - Ken Dorman files, 1979	box 9	folder 11
Collection of letters regarding ELF - Ken Dorman files	box 9	folder 12
Biological and Human Health Effects on ELF - Ken Dorman files, March, 1985	box 9	folder 13
Sanguine Telephone Interference Program - Ken Dorman files, Sep-71	box 9	folder 14

Final Environmental Impact Statement - Ken Dorman files, April, 1972	box 9	folder 15
ELF Ecological Monitoring Program - Wetland Studies - Ken Dorman files, November, 1989	box 9	folder 16
ELF Ecological Monitoring Program - Slime Mold Studies - Ken Dorman files, January, 1990	box 9	folder 17
Congress Distribution List - Ken Dorman files	box 9	folder 18
Environmental Assessment for Terminal Groups Upgrade, Wisconsin - Ken Dorman files, September, 1984	box 9	folder 19
ELF Communications - Questions and Answers - Ken Dorman files, November, 1975	box 9	folder 20
Effect of ELF radiation on the pigeon and the rat - Ken Dorman files, February, 1973	box 9	folder 21
ELF Location Map - Ken Dorman files	box 9	folder 22
Technical memo #2, IITRI Project - Ken Dorman files, October, 1972	box 9	folder 23
Household appliance magnetic field survey - Ken Dorman files, March, 1984	box 9	folder 24
Summary of 1983 progress - Ecological Monitoring Program - Ken Dorman files, July, 1984	box 9	folder 25
Testimonies: Health and Safety - Ken Dorman files	box 10	folder 5
"Scientists Decry Seafarer Ethics" - Ken Dorman files		
Collection of electrical utilities data for ELF Michigan - actual plan drawings - Ken Dorman files	box 11	folder 1
Collection of electrical utilities data for ELF Michigan - Published material - Ken Dorman files	box 11	folder 2
Project Sanguine Research - Ken Dorman files	box 12	folder 32
Press Releases - Ken Dorman files	box 12	folder 34
Articles - Ken Dorman files	box 12	folder 35
Letters - Ken Dorman files	box 13	folder 15
Letters - Ken Dorman files	box 13	folder 16
ELF Pamphlets - Ken Dorman files	box 14	folder 20
Resolutions - Ken Dorman files	box 14	folder 22
Miscellaneous 1 - Ken Dorman files	box 15	folder 2
Misc. 10 - Ken Dorman files	box 15	folder 11
Misc. 11 - Ken Dorman files	box 15	folder 12

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Kalliokoski Files

Language of the Material: English.

Title/Description	Instances	
Mineral Exploration Data - Michigan Site - Kalliokoski files	box 11	folder 3
ELF Wisconsin - Non Navy Technical - Kalliokoski files	box 11	folder 4
ELF Wisconsin - New Items and popular articles - Kalliokoski files	box 11	folder 5
ELF Navy Reports - Kalliokoski files	box 11	folder 6
ELF Michigan - Kalliokoski files	box 11	folder 7
Misc. 8 - Kalliokoski files	box 15	folder 9
Misc. 9 - Kalliokoski files	box 15	folder 10
Misc. 12 - Kalliokoski files	box 15	folder 13

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Audiovisual Material

Language of the Material: English.

Title/Description	Instances	
Audio Tape - Clayton + Hochko, Attorney General, August 1977, October 1977	box 11	folder 8
Audio Tape - Donovan/Alexander WMPL, Mar-77	box 11	folder 9
Audio Tape - Project ELF Discussion WJNR, May-79	box 11	folder 10
Audio Tape - Seafarer Debate, Jan-79	box 11	folder 11
ELF Microfilm	box 11	folder 12
ELF Microfilm	box 11	folder 13
Audio Tape - Hoffman, Donovan, March 1977, April 1977	box 11	folder 14
Audio Tape - K. Becher / R. Dunnebacke / C. Kikuchi, Aug-80	box 11	folder 15
Audio Tape - Milliken	box 11	folder 16
Audio Tape - Complete Ch.6 Donovan, Mar-77	box 11	folder 17
Audio Tape - RA Seafarer Info., Feb-77	box 11	folder 18

Audio Tape - Clements - Yerg Seafarer Houghton Hearing "Slander"	box 11	folder 19
Audio Tape - Joan PBB	box 11	folder 20
Audio Tape - ELF, Mar-81	box 11	folder 21
Audio Tape - Seafarer Info. Elena, Feb-77	box 11	folder 22
Audio Tape - Commissioners send Seafarer letter to Jacobetti	box 11	folder 23
Audio Tape - WCCY - VFW, May-80	box 11	folder 24
Audio Tape - ELF Monkeys	box 11	folder 25
Audio Tape - Admiral WMPL	box 11	folder 26
Audio Tape - OAP - Seafarer neutral	box 11	folder 27
Audio Tape - New York Times Story, May-77	box 11	folder 28
Audio Tape - Donovan - WHDF, Mar-77	box 11	folder 29
Audio Tape - 60 Minutes - Seafarer	box 11	folder 30

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Research Reports, Summaries

Language of the Material: English.

Title/Description	Instances	
Michigan Environmental Review Board 1, 1975-77	box 12	folder 26
Michigan Environmental Review Board 2, 1977-78	box 12	folder 27
Michigan Environmental Review Board 3, 1975-76	box 12	folder 28
ELF Environmental Research Reports and Papers, November, 1975	box 15	folder 14
Proceedings of the AD HOC Committee for the Review of Biomedical and Ecological Effects of ELF Radiation, December, 1973	box 15	folder 15
ELF Interference Voltage Thresholds for Pipeline Systems, October, 1972	box 15	folder 16
Preliminary Engineering Guide for Power Distribution System Interference Mitigation, November, 1972	box 15	folder 17
Single-Frequency Magnetotelluric Tensor Impedance Measurements in the Upper Peninsula, Michigan, May, 1974	box 15	folder 18
The Lessons of Sanguine - A Case Study in ECO - Action, June, 1971	box 15	folder 19

Navy ELF Biological and Ecological Research Summary, May, 1976	box 15	folder 20

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Brown Files

Language of the Material: English.

Title/Description	Instances
Residents Concerned About ELF	
Exposure of Primates for One Year to Electric and Magnetic Fields Associated with ELF Communication Systems, Nov 1977	
Seafarer ELF Communications System Final Environmental Impact Statement for Site Selection and Test Operations: Summary Statement and Distribution List, Dec 1977	
Seafarer Communications System Final Environmental Impact Statement for Site Selection and Test Operation: Public Interest, Dec 1977	
Illustrations and Tables	
Seafarer ELF Communications System Final Impact Statement for Site Selection and Test Operations: Environmental Impacts of the New Mexico Geographic Alternative, Dec 1977	
Searfarer ELF Communications System Final Environmental Impact Statement for Site Selection and Test Operations: Environmental Impacts of the Nevada Geographic Alternative, Dec 1977	
Seafarer	
ELF	
Seafarer	
Seafarer	
Seafarer	
Seafarer	
Seafarer	
Seafarer	
Seafarer	

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Patterson Files

Language of the Material: English.

Title/Description	Instances	
ELF Grounds Review Meeting, July 13, 1983	box 17	folder 1
ELF Grounds Review Meeting, August 10, 1983	box 17	folder 2
ELF Grounds Review Meeting, September 14, 1983	box 17	folder 3
D.C. Resistivity Measurements Upper Peninsula, Michigan, July 1, 1982	box 17	folder 4
Tensor Magnetotelluric Measurements of Earth Conductivity, Wisconsin and Michigan	box 17	folder 5
Tensor Magnetotelluric Measurements of Earth Conductivity, Upper Peninsula, Michigan, July 1, 1982	box 17	folder 6
Tensor Magnetotelluric Measurements at the Wisconsin Test Facility, July 31, 1982	box 17	folder 7
ELF Communications Michigan Site Number 3 Ground Design Review, June 14, 1983	box 17	folder 8
Failure Analysis West Test Ground - Clam Lake, June, 1983	box 17	folder 9
Interim Chronology of Events at Well Site 2 (WB3), June 15, 1983	box 18	folder 1
Vertical Grounding Program - ELF Antenna: First Michigan Array 1, 2, &3, July 14, 1983	box 18	folder 2
WTF Vertical Well Test Bed Evaluation, August 26, 1983	box 18	folder 3
ELF Communications MTF/WTF Grounds Design Project Report (1 of 2), October 14, 1983	box 18	folder 4
ELF Communications MTF/WTF Grounds Design Project Report (2 of 2), October 14, 1983	box 18	folder 5
Description of and Procedures for Electrical Testing of MTF Ground Areas (Horizontal Wires and Vertical Wells), October 26, 1983	box 18	folder 6
ELF Communications System Antenna Terminal Grounds Design Report, March, 1984	box 18	folder 7
MTF Terminal Grounds Update Review, February 27, 1985	box 18	folder 8
ELF Communications WTF Terminal Final Test Report, December, 1985	box 19	folder 9
MTF Terminal Grounds Low Power Confidence Testing Final Report, December, 1986	box 18	folder 10
Survey of Chequamegon National Forest, 1968	box 19	folder 1
Tables, Graphs, and Schematics of Survey Sites	box 19	folder 2

Tables, Graphs, and Schematics of of Survey Sites. Topographic Maps Included	box 19	folder 3
Geological Maps	box 19	folder 4
Geological Survey - Precambrian Rocks in Wisconsin, 1970	box 19	folder 5
County and National Forest Maps, 1986	box 19	folder 6
Michigan Site Notes, 1997	box 19	folder 7
SAIC Project Wisconsin Survey Site Notes, 1997	box 19	folder 8
Micki Maki Field Books 1-3, 1997	box 19	folder 9

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